SIN 133

Issue 10.2
March 2021

Suppliers' Information Note

For The BT Network

The BT Cardway Service

SERVICE DESCRIPTION

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1. Introduction

This Suppliers' Information Note (SIN) describes the BT Cardway service. The service offers a means of accessing processing hosts in order to obtain automatic authorisation for a variety of payment, loyalty and other types of transaction.

2. Description of the BT Cardway service

2.1 General

BT Cardway is a PCI-DSS compliant secure, flexible network that provides connectivity options for the delivery of all types of transaction, a transaction being a short message exchange, normally being a request being sent in requiring a response to be returned.

Transactions that originate from Point of Sale (PoS) terminals, Smart Phones, ATM's or Host Systems can be securely delivered to Acquiring Banks or other processors globally, conformant to the latest Payment Card Industry Data Security Standards (PCI-DSS).

The BT Cardway service has been designed to help merchants and acquirers alike overcome the complexity of implementing card industry security standards. BT Cardway provides a secure network environment for anyone accepting card transactions.

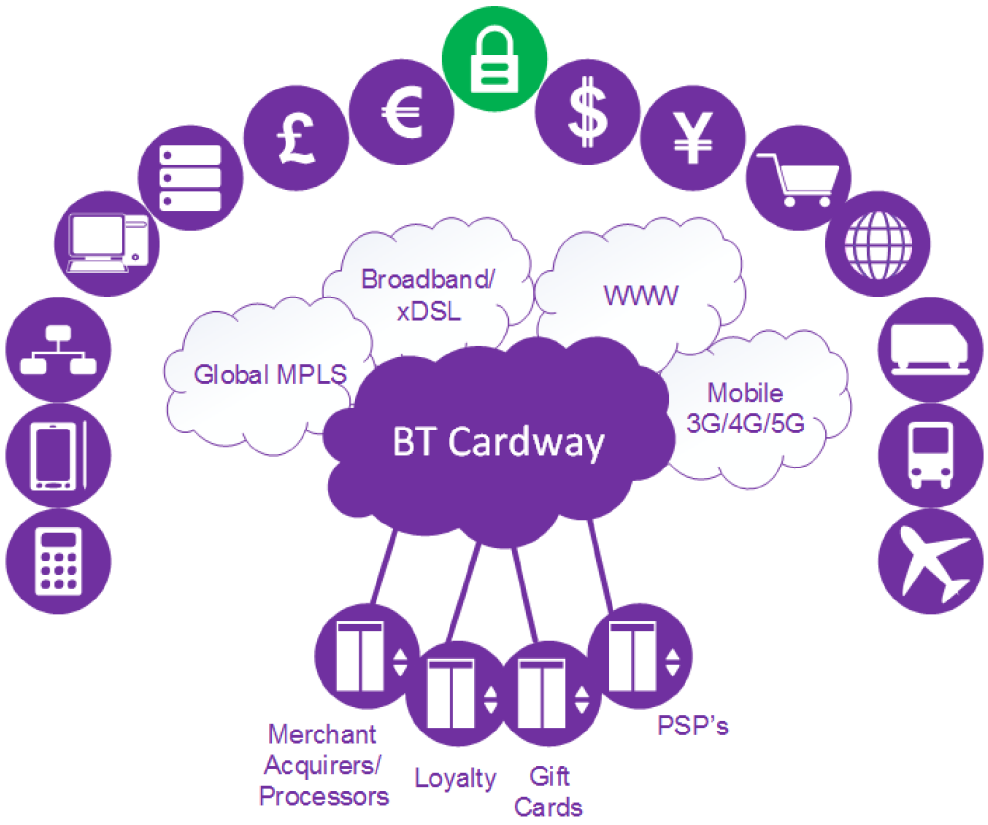


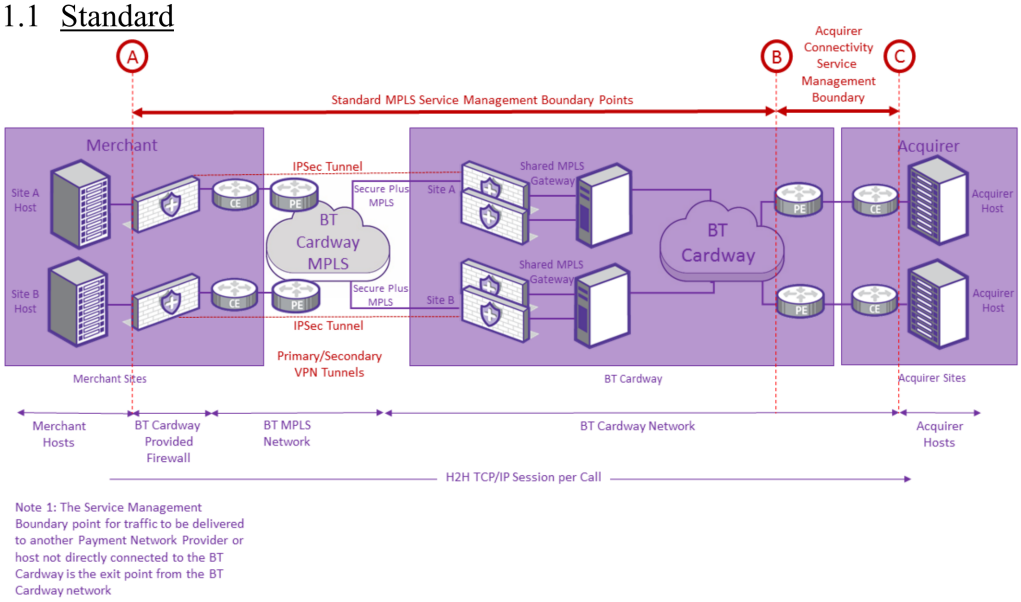
Figure 1 Cardway Network

2.2 BT Cardway product options

2.2.1 MPLS

Both merchants and acquirers connect to BT Cardway via BT MPLS connections as shown in the diagrams below. Acquirers would always take a resilient connection.

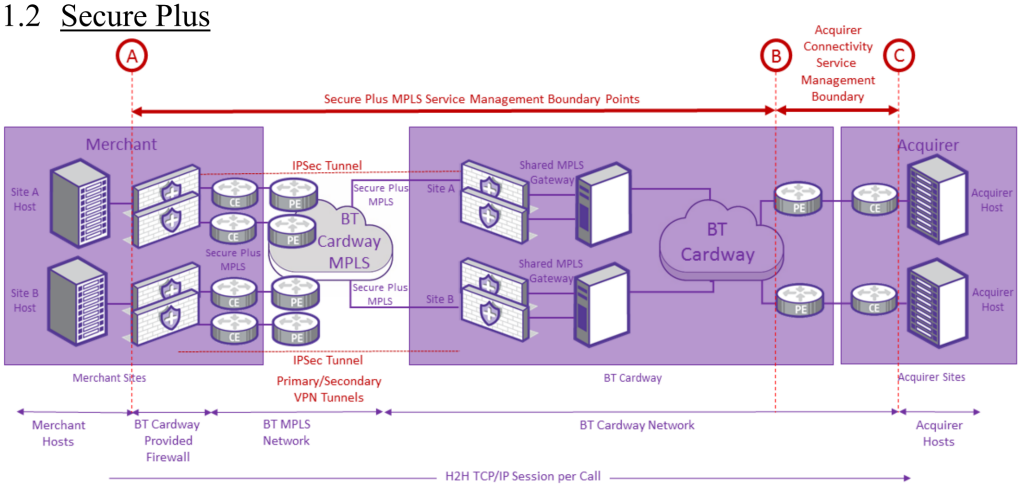
2.2.1.1 Standard



Note 1: The Service Management Boundary point for traffic to be delivered to another Payment Network Provider or host not directly connected to the BT Cardway is the exit point from the BT Cardway network

The standard service is delivered using a single circuit with no resilience or redundancy.

2.2.1.2 Secure Plus



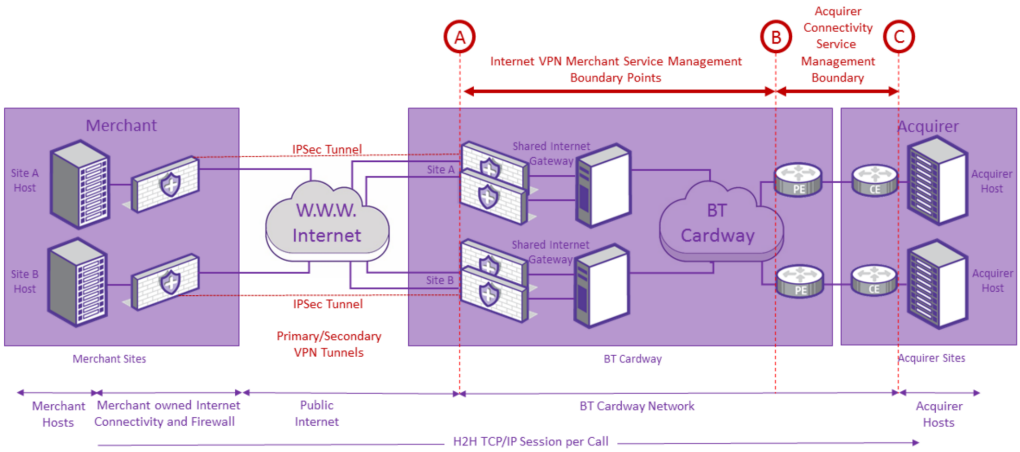
Note 1: The Service Management Boundary point for traffic to be delivered to another Payment Network Provider or host not directly connected to the BT Cardway is the exit point from the BT Cardway network

The Secure Plus service is delivered using dual circuits with diverse routing into each Customer site i.e. two diversely routed circuits per site.

2.2.1.3 Split Site Secure Plus

The Split Site Secure Plus service is delivered using two (or more) diversely routed circuits into two (or more) Customer sites i.e. one circuit per site.

2.2.2 Internet VPN

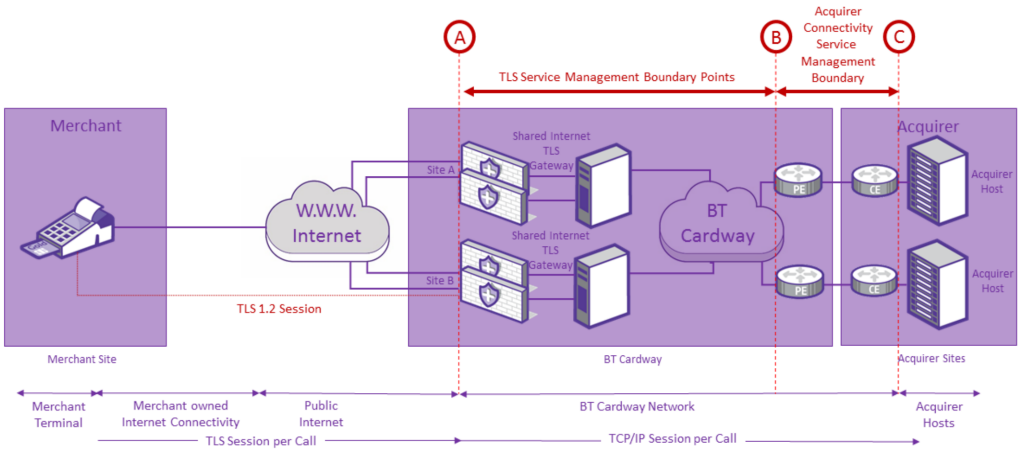


Note 1: The Service Management Boundary point for traffic to be delivered to another Payment Network Provider or host not directly connected to the BT Cardway is the exit point from the BT Cardway network

The BT Cardway VPN Service provides internet connected merchants with secure connectivity to deliver transactional data to their acquiring host.

The service utilises the merchant's standard internet connectivity to route into the BT Cardway shared internet gateways to provide connectivity for payment card authorisations from Merchant terminals and servers. Transactions are routed over secure, encrypted IPSec tunnels that are established between the Merchants Internet connection router and the BT Cardway ingress firewall that interfaces the BT Cardway Internet Gateway with the public Internet.

2.2.3 Internet TLS



Note 1: The Service Management Boundary point for traffic to be delivered to another Payment Network Provider or host not directly connected to the BT Cardway is the exit point from the BT Cardway network

The BT Cardway TLS (Transport Layer Security) Service provides internet connected merchants with secure connectivity to deliver transactional data to their acquiring host.

The service utilises the merchants' standard internet connectivity to route into the BT Cardway shared internet gateways to provide connectivity for payment card authorisations from customer devices supporting the TLS 1.2 standard for encryption and transaction security.

TLS sessions are established between the Merchant device (IP terminal or server) and are terminated within the BT Cardway network on the ingress firewall that provides the interface between the BT Cardway Internet Gateway and the public Internet.

Transmitted data is encrypted using custom algorithm's with BT trustwise certificates.

The connection is reliable because each message transmitted includes a message integrity check using a message authentication code to prevent undetected loss or alteration of the data during transmission.

3. Technical Specification

The network supports terminals using a number of different access methods. MPLS (IP Connect)	Ethernet, ADSL	N/A	IP, BGP, XOT, optional headers: bin2, bin3, bin4, vap, asc4, asc5, bcd2, bcd4, bin2E, bin3E,bin4E and mbit
BTnet (Internet Connect UK)	Ethernet, ADSL	N/A	IP, BGP, XOT, optional headers: bin2, bin3, bin4, vap, asc4, asc5, bcd2, bcd4, bin2E, bin3E,bin4E and mbit

MPLS this can either be:

- BT Cardway shared customer access where multiple VPN connections are supported on an Ethernet access by configuring the access as an IEEE 802.1q VLAN trunk with each VPN using an individual VLAN associated with a VLAN ID. The VLAN ID associated with each VPN connection will be allocated by BT at the time of subscription.
- Dedicated customer access MPLS where the customer provides their own circuit and router into the BT core site.

Whether shared or dedicated connection compatible CPE will connect to an IP network which will allow an MPLS VPN to be established as described in SIN 385 Data is encrypted using IPSEC tunnels. The BT Cardway Network makes no assumptions as to the physical connectivity to the CPE, other than that it conveys an MPLS VPN over IPv4.

For Internet connection compatible CPE will connect to an IP network which will allow a VPN to be established and data is encrypted using IPSEC or TLS.

3.1 IP Message Support

The merchant and acquirer gateway devices (ACP's) have the capability to support various message headers and parity settings.

3.1.1 TCP Header Support

The following are valid entries to specify the length of the message in the header for TCP messages.

Options	
None	None defined
Mbit	Same as "none" with MBIT support enabled (default)

bin2	Two-byte header containing the packet length as a binary value
bin3	Three-byte header containing the packet length as a binary value
bin4	Four-byte header containing the packet length as a binary value
VAP	Four-byte header containing the packet length in the first two bytes. The other two bytes are padded with 0's
ASC4	Four-byte header containing the packet length in ASCII format Example: A value of 37 will be represented as "0037" and in hex as (30, 30, 33, 37).
ASC5	Five-byte header containing the packet length in ASCII format. Example: A value of 37 will be represented as "00037" and in hex as (30, 30, 30, 33, 37).
Bcd2	Two-byte header containing the packet length as a bcd value
Bcd4	Four-byte header containing the packet length as a bcd value
Bin2E	Two-byte header containing the packet length plus the header length as a binary value.
Bin3E	Three-byte header containing the packet length plus the header length as a binary value.
Bin4E	Four-byte header containing the packet length plus the header length as a binary value.

3.1.2 Network Parity

This option governs the network parity of outgoing TCP/IP traffic.

Options	
Transparent	Transparent pass-through (default)
7E1	Set parity to 7E1 for outgoing data and strip off parity bit for incoming data.
8N1	Strip off parity bit for outgoing data
8N1E	Strips off parity bit for outgoing data and set parity to 7E1 for incoming data

4. Service Availability

For further information on service availability and tariffs, please contact:

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5. Abbreviations

ADSL	Asymmetric Digital Subscriber Line
ATM	Automatic Teller Machine
APACS	Association for Payment Clearing Services

BGP	Border Gateway Protocol
GPRS	General Packet Radio Service
GSM	Global System for Mobile
IEEE	IEEE 802.1q, Recommendations for Virtual LANs
IP	Internet Protocol
IPSEC	Internet Protocol Security
MPLS	Multi Protocol Label Switching
SIN	Suppliers Information Note
TLS	Transport Layer Security
VLANs	Virtual Local Area Networks
VPN	Virtual Private Network

7. References

Suppliers' Information Notes

1	SIN 385	IP Connect UK Service Description

Standards published by the Association for Payment Clearing Services:

APACS30	Specification For A Credit Authorisation Terminal
APACS40	Acquirers' Interface Requirements For Electronic Data Capture Terminals
APACS70	Redrafting of a number of previous APACS standards

IP related information

IP Bin header	An optional IP header that defines the IP packet length as a binary or ASCII value.
MPLS VPN	Multiprotocol Label Switching (MPLS) is a protocol for speeding up and shaping network traffic flows. MPLS allows most packets to be forwarded at Layer 2 (the switching level) rather than having to be passed up to Layer 3 (the routing level). Each packet gets labelled on entry into the service provider's network by the ingress router. All the subsequent routing switches perform packet forwarding based only on those labels—they never look as far as the IP header. Finally, the egress router removes the label(s) and forwards the original IP packet toward its final destination. A customer VPN used as a secure path across the BT MPLS network.

8. History

Issue	Date	Changes
Issue 1	November 1988	First published.
Issue 2	December 1998	
Issue 2.1	June 2003	Format Updated. Section on Terminal Equipment Approvals removed. "Private circuit" replaced by "Cardway Delivery Connection" with interface defined by reference to SIN 57.
Issue 3.0	July 2004	GSM access added.
Issue 4.0	July 2006	IP/MPLS facility added
Issue 4.1	August 2007	Contact information amended in Clause 4, Service Availability
Issue 5.0	December 2008	Information on GPRS and IP connectivity now included
Issue 6.0	February 2011	General amendments. Addition of the Cardway PPP service.
Issue 6.1	May 2011	Minor editorial improvements
Issue 7	October 2014	Updates and amendments Change SINet site references from http://www.sinet.bt.com to http://www.btplc.com/sinet/
Issue 8	February 2016	Updates and amendments
Issue 9	June 2017	Updates and amendments. Section 2 updated to include the following: - MPLS access in section 2.2.2 - Internet VPN in Section 2.2.3 - Internet TLS in section 2.3.4 Section 3 updated to reflect all BT Cardway access types and associated protocols in particular Section 3.1 added to cover the IP message types New contact details added to Section 4
Issue 10	January 2020	Minor updates and amendments. Section 2 updated as follows: – Revised overview diagram added – V.110 removed as a dial service option – X.25 service removed New contact details added to Section 4
Issue 10.1	July 2020	Change SINet site references from http://www.btplc.com/sinet/ to

		https://www.bt.com/about/sinet
Issue 10.2	March 2021	Removal of PSTN and ISDN services.

- END -